

3. A method of making a lung organoid, the method comprising:

providing a hydrogel including a mammalian lung fibroblast cells;

depositing an endothelial cell layer comprising a mammalian endothelial cells onto a first side of the hydrogel; and

depositing an epithelial cell layer comprising a mammalian lung epithelial cells onto a second side of the hydrogel that is opposite the first side of the hydrogel.

4. The method of claim 3, wherein said depositing steps are carried out by spreading, painting, coating, printing, bioprinting, and/or spraying.

5. The method of claim 3, wherein the hydrogel is cross-linked.

6. The method of claim 3, wherein the hydrogel comprises gelatin, fibrinogen, gellan gum, pluronics (poloxamers), alginate, chitosan, hyaluronic acid, cellulose and/or collagen.

* * * * *